U.S. GOVERNMENT
PRINTING OFFICE
KEEPING AMERICA INFORMED

ASSESSMENT REPORT 08-08

FEDERAL DIGITAL SYSTEM (FDSYS) INDEPENDENT VERIFICATION AND VALIDATION (IV&V) – THIRD QUARTER OBSERVATIONS AND RECOMMENDATIONS

August 8, 2008

OFFICE OF INSPECTOR GENERAL

U.S. GOVERNMENT PRINTING OFFICE
KEEPING AMERICA INFORMED

Memorandum

OFFICE OF INSPECTOR GENERAL

DATE: August 8, 2008

REPLY TO
ATTN OF: Assistant Inspector General for Audits and Inspections

SUBJECT: Federal Digital System (FDsys) Independent Verification and Validation (IV&V) – Final Third Quarter Risk Management, Issues, and Traceability Report

TO: Chief Information Officer

The GPO Office of Inspector General (OIG) is conducting independent verification and validation (IV&V) of GPO's Federal Digital System (FDsys)[1] implementation. The OIG contracted with American Systems[2] to conduct IV&V for the public release of FDsys Release 1.C.[3] As part of its contract with the OIG, American Systems is assessing the state of program management, technical and testing plans and other efforts related to the rollout of Release 1.C. American Systems is required by the contract to issue to the OIG a quarterly Risk Management, Issues, and Traceability Report, providing observations and recommendations on the program's technical, schedule, and cost risks as well as requirements traceability of those risks and the effectiveness of the program management processes in controlling risk avoidance. Additionally, at the end of each FDsys release phase, American Systems is required to issue a release phase summary program management report that addresses delivery of the technical baseline per the FDsys Master Program Schedule and the risks that affect the schedule's critical path to the next phase.

For the period January 2008 to March 2008, American Systems continued its independent assessment of the FDsys Program. During this period GPO implemented a reorganization of the Master Program with respect to Government and Contractor participation and responsibilities, and implemented a new design for FDsys.[4] According

---

[1] The FDsys program is a multimillion dollar effort that GPO is funding and managing to modernize the GPO information collection, processing, and dissemination capabilities it performs for the three branches of the Federal Government.

[2] American Systems, located in Chantilly, Virginia, is a large information technology company with significant experience in the realm of IV&V for Federal civilian and Defense agencies, including the Department of State, the Navy, and the U.S. Agency for International Development.

[3] American Systems IV&V methodology is referenced to the framework established by the Institute of Electrical and Electronic Engineers (IEEE) Standard 1012-2004, the IEEE Standard for Software Verification and Validation.

[4] Due to the reorganization, we did not issue a Second Quarter IV&V report.

to GPO officials, the primary reason for the reorganization was GPO's dissatisfaction with the Contractor's performance. Although the OIG first quarterly report[5] identified various weaknesses in program management practices used by the Contractor for the Release 1.B pilot system, American Systems was not tasked to investigate or evaluate the reasons behind GPO's decision to reorganize the program, and accordingly does not render an opinion on the reorganization.[6] American Systems is responsible for informing the OIG of the risks the FDsys program faces at the end of each quarter. The attached report prepared by American Systems is intended to provide a high-level overview of key risks and issues as of March 31, 2008.

This report contains four recommendations to further strengthen management of the FDsys program, and management's response to those recommendations. Management's response is included in its entirety in Appendix A. Our evaluation of management's response has been incorporated into the body of the report. We consider management's proposed actions responsive to each of the four report recommendations. Recommendation 3 will be closed with the issuance of this report. The remaining recommendations will remain open for reporting purposes until corrective actions are complete. The status of each recommendation upon issuance of this report is included in Appendix B. Please notify us when actions have been completed on the remaining recommendations. The final report distribution is in Appendix C.

If you have questions concerning this letter or the IV&V process, please contact Mr. Brent Melson, Deputy Assistant Inspector General for Audits and Inspections at (202) 512-2037, or me at (202) 512-2009.

Kevin J. Carson
Assistant Inspector General for Audits and Inspections

Attachment

cc:
Chief of Staff
Chief Management Officer
Chief Technology Officer

[5] OIG Assessment Report Number 08-04, "Federal Digital System Independent Verification and Validation – First Quarter Observations and Recommendations," dated March 28, 2008.

[6] American Systems was not privy to all documentation and communication associated with the Contractor's performance and GPO's decision to reorganize.

IV&V RISK MANAGEMENT, ISSUES, AND TRACEABILITY REPORT

TO:	Brent Melson, COTR
FROM:	IV&V, Jon Valett
IV&V OF:	Quarterly Report (Amended Final – Document Number 01-031)
SUBJECT:	January – March 2008 Quarterly Report
DATE:	June 6, 2008
CC:	Dan Rose, David Harold, John Best, Chris Parr, Shawn O'Rourke

This report presents the critical technical, schedule, and cost risks identified for the GPO Federal Digital System (FDsys) Program. Specifically, it provides a high-level overview of the key risks and issues that IV&V has identified within the last quarter. This report also addresses IV&V assessments of the requirements traceability, test documentation, and the risk management program that were performed over this same time period.

This is the third IV&V quarterly report and covers the period from January 2008 to March 2008. It includes information taken from the following:

- IV&V Task Report, *Evaluate FDsys Allocation and Traceability of Requirements*, January 16, 2008;
- IV&V Risk Analysis Report, *Perform Risk Analysis*, January 22, 2008;
- IV&V Quick Look Report, *Establish R1.C2 Allocated Baseline*, March 13, 2008;
- IV&V Presentation, "Harris to T&M Contract to Do Software Development – IV&V Analysis," February 14, 2008;
- IV&V Presentation, "FDsys Organization and Responsibilities Comments," February 29, 2008; and,
- IV&V Presentation, "Initial Comments on the SDD and Approach for Release 1.C2," March 14, 2008.

1. Technical Risks Identified

Over the last quarter, two major changes occurred in the FDsys Program. The first change implemented a reorganization of the Program with respect to Government and Contractor participation and responsibilities. This reorganization reduces the Harris tasking and increases the Program Management Office (PMO) efforts. The PMO will take lead responsibility to manage the development, integrate, and deploy FDsys Release 1.C2 (R1C2); Harris will develop the actual FDsys software and support the procurement and installation of the system hardware. The second change implements a new design for FDsys. The Harris System Architecture Design Document (SADD) for R1C2 will be replaced by the FDsys System Design Document (SDD) developed by the PMO.

These two changes were made by the government because they believed that the Harris team was not adequately managing the program and the Harris design was not of

sufficient quality. While IV&V recognizes that these changes were made with a goal of mitigating technical risks and reducing overall program risk, the changes also present their share of risk. This IV&V report reflects risks as of March 31, 2008, as follows:

- A detailed plan needs to be developed to support the new organization and the subsequent development of R1C2.
    - A detailed plan and development schedule will decrease the risk that mistakes/missteps are made; production is reduced; time and money are wasted; and, appropriate oversight and management are not performed.
    - In the absence of a plan, it is very difficult for the GPO to monitor, manage, and coordinate the progress of the FDsys system development. Furthermore, without a plan, formal deliverables for the program as a whole cannot be fully established. As a result, a review of program products to assess technical progress becomes impossible.
    - The PMO has indicated that the target date for R1C2 is late 2008. An integrated schedule needs to be developed showing the software development process, major milestones, critical path, inter-dependencies of efforts, and expected time/resources/tasks required to achieve this target date.
    - The initial deployment of FDsys requires the procurement and installation of a significant hardware suite. In general, hardware acquisitions have long lead times and are part of the critical path for system development. A schedule to buy and install the FDsys hardware must be developed that is consistent with the software schedule; otherwise, FDsys deployment may be delayed.
    - Currently, the system requirements for R1C2 have been established and are maintained by Harris in a DOORS database. With the new design (i.e., PMO SDD), it may not be desired or possible (e.g., based on the available time) to implement and test all these requirements. Thus, the planned content of R1C2 may need to be updated to meet the initial deployment schedule.
    - The PMO also indicated a development process that included a "Pilot" version of R1C2 prior to deployment[7]. The content and tasks associated with this Pilot are unknown with respect to the overall development schedule for R1C2.

- The reorganization requires substantially more Government participation and oversight than the previous FDsys development process. This reorganization presents several challenges.
    - The PMO has never designed, built, deployed, or managed the software development of a system as large and complex as FDsys. In addition, the PMO has not demonstrated that it has all of the necessary skills in the

[7] Source: "System Design Document" Powerpoint presentation dated March 4, 2008. Presented at FDsys program review meeting.

areas of program management, earned value management, configuration management, and technical management needed to build FDsys. The PMO is aware that skill gaps exist and indicated that they plan to contract many support activities. As of March 31, 2008, IV&V did not have details of plans to fill these gaps.

- The GPO plans to hire a System Engineering and Technology Assistance (SETA) Contractor to assist in the development of FDsys and augment the Government technical and management capabilities. Obtaining a SETA Contractor will take time (i.e., the RFP had not been issued at the time this report was prepared). After contract award, the SETA Contractor must garner an understanding of FDsys before being able to make a substantial contribution to the development efforts. As of March 31, this contract had not been awarded.
- Harris system engineering and test personnel with significant knowledge of the FDsys requirements and design have left the Program. As a result, the PMO will need to rely on Government and SETA Contractor personnel to replace their knowledge and capabilities.
- Oversight and responsibilities within the FDsys Program are not clear. As of March 31, 2008 no organization chart or project plan was in place that clearly defined the roles and responsibilities of each person and position in the program. The PMO, Harris (and its subcontractors), SETA Contractor, and Subject Matter Experts (SME's) must work together to develop and deploy FDsys R1C2. The management, coordination, and lines of authority for all efforts within the FDsys Program must be defined.
- Using Harris as a software developer to implement the PMO's design/architecture involves very high technical risk. If the PMO does not provide a complete and detailed design, Harris will either develop the wrong software or will develop software that is difficult or impossible to integrate.

- The PMO's plan to use the proposed SDD as the basis to develop R1C2 instead of using the Harris SADD represents a new design and introduces a number of issues that complicate the FDsys development process.

  - Substantial time and effort may be required to achieve an adequate preliminary design, because the SDD does not contain the expected information to begin a detailed design (e.g., missing data models, software components). In addition, since the SDD represents a different view of the design for R1C2, it is not clear what (if any) portions of the Harris design can be incorporated into the GPO design.
  - The SDD contains a general mapping of the R1C2 Features to sections of the proposed design; it does not define the software component(s) needed to implement the R1C2 requirements. Thus, the proposed design may not encompass all the requirements targeted for R1C2.
  - The PMO design may not be consistent with the other documentation and the hardware selected for FDsys. For example, the system Workflows,

Use Cases, Software Feature Specification (SFS), Design Validation Test (DVT) Plan, and Hardware Design Document (HDD) are inherently tied to the Harris SADD. Impacts to these items to support the SDD are unknown and must be determined and evaluated.

- The PMO will rely on Harris personnel and other consultants (i.e., SETA Contractor and other SME's) to provide the design details for many areas in the SDD. However, these individuals are not familiar with the PMO design; thus, developing the design details may be more difficult and time consuming than expected. In addition, systems engineering oversight will be critical to developing a suitable design to meet GPO's goals. For example, the PMO will need to coordinate and broker technical input from the SME's to ensure that the architecture does not become too dependent on a particular COTS product (e.g., Documentum or FAST).

2. Schedule Risks Identified

There are a number of FDsys schedule risks that accompany the above technical risks. However, without a detailed plan, IV&V cannot evaluate the program schedule.

- The lack of a detailed plan for R1C2 makes it extremely difficult to successfully deploy a system as complicated as FDsys in an efficient and timely manner. Without a comprehensive schedule, progress cannot be assessed and an accurate determination of whether or not the system can be successfully deployed by the end of 2008 is not possible.
- The Program reorganization introduces delays in the development schedule. PMO personnel must assume more extensive technical and management roles; a SETA Contractor must be hired and brought up to speed; and, Harris software developers must transition from the familiar SADD design to an unfamiliar (and less specified) SDD design. Additionally, as of March 31, 2008, no contractor has been hired to develop the "parsers" [8] required for R1C2.
- Replacing the Harris SADD with the PMO SDD delays the overall FDsys development process. As a design document, the SDD is not as mature as the SADD. Many areas within the SDD must be defined and written by software developers who have not been involved with and may not understand the PMO design. Other Harris documentation that is based on the SADD must be updated and/or replaced to be consistent with the PMO SDD.

[8] The FDsys "parsers" are custom software designed to extract metadata from a given document. The metadata set that a parser extracts, as well as determining which parser to use for the extraction, is dependent on the collection to which the document belongs. Given a collection and a document, the parsers component will parse the document and return an xml file containing metadata.

3. Cost Risks Identified

There are inherent cost risks associated with the technical and schedule risks. However, until a detailed plan and a basis of estimate is developed, IV&V cannot evaluate the cost of the program.

- By their nature, cost risks are directly correlated with schedule risks. Any schedule increase results in additional costs.
- While the removal of Harris program management and overhead represents a potential cost savings, a true estimate of the cost of the program can not be determined until a detailed plan is presented.
- The status of the Harris documentation for R1C2 presents another cost risk. The suite of documentation (e.g., SADD, Design Validation Test Plan, Software Development Plan, Hardware Design Document) prepared by Harris to support a Preliminary Design Review may not support the PMO design. If so, the money already spent by Harris is lost; and, the costs to update/replace this documentation will be substantial.
- The technical risks also produce cost risks.
  - The hiring of a SETA Contractor to support the PMO impacts the overall development costs.
  - Changes to documentation, Hardware procurement, and tasking required to implement the PMO design may increase the costs.
  - The development and testing of a R1C2 "Pilot" version (currently not defined) could introduce a substantial effort and unexpected costs.
  - It may be more difficult and costly for Harris developers to implement the PMO SDD design rather than the Harris SADD design (i.e., Harris has a better understanding of their own design).

4. Requirements Allocation and Traceability Evaluation

During this quarter, IV&V performed an evaluation of the allocation and traceability of the system requirements assigned to FDsys R1C2. In December 2007, the PMO and Harris established a requirements baseline for R1C2 that includes the specific Features assigned to this Release. The baseline, which is stored and maintained in a DOORS database, consists of 1045 requirements. Each requirement is assigned to one of the Features within a Feature Group. In addition, to support the initial design and development efforts, Harris allocated the requirements to a set of general areas called "R1C2 Groups", which IV&V categorized as three implementation methods: software, hardware, or operational (e.g., performance related) capability.

Using the Harris extract of the Release 1C.2 requirements from DOORS, IV&V evaluated the assigned allocation and traceability for each requirement. For allocation, IV&V determined the most reasonable implementation method for the requirement based on its description, intent, and context within the system. For traceability, IV&V evaluated whether or not the description of the assigned Feature included the

functionality and/or intent of the requirement; and, if similar requirements were also traced to the same Feature.

The IV&V evaluation determined that the current allocation and traceability for the 1045 Release 1C.2 system requirements are satisfactory with only a few exceptions. IV&V identified nine (9) requirements with no allocation or potentially an improper allocation. IV&V also identified thirty (30) requirements that may be traced to the incorrect Feature. These exceptions represent no concerns or risks to the on-going development of FDsys Release 1C.2.

The IV&V recommendations related to this task were delivered to the GPO Chief Information Officer (CIO) in a report dated January 16, 2008. These recommendations are provided in section 7 of this report.

5. Assessment of R1C2 Test Documentation

During this quarter, IV&V also performed an assessment of the FDsys documentation prepared by Harris to support the R1C2 Preliminary Design Review (PDR). The documents assessed were the Master Test Plan (MTP) and the Design Validation Test (DVT). The objective was to determine the adequacy of the MTP and DVT Plan at the PDR milestone. The MTP was reviewed to determine if a consistent test strategy and methodology was presented throughout the various levels of testing in order to verify and validate the FDsys Requirements Document (RD). The DVT Plan, which is used for the validation of the FDsys requirements, was reviewed to ensure that the test objectives and approach for validation of the RD requirements is consistent with the strategy as documented in the MTP.

IV&V's review produced technical comments to both documents and resulted in two main findings. First, while the MTP improved from its previous version, it still lacks a complete definition of the overall test program and associated responsibilities. Second, the DVT Plan presents an initial framework for testing, but it is at too high a level and does not identify a clear approach to verify the RD requirements.

Based on these findings, IV&V identified the following technical and management risks:

- The MTP should clearly define the responsibilities and tasks required to ensure all elements of the Test Program are developed, implemented, and properly coordinated (e.g., Security, Performance, User, Beta). Without this detail, adverse impacts (e.g., missing/insufficient testing) to the execution of the overall Test Program are possible.

- At this point, the DVT Plan should identify a clear approach/strategy (i.e., test cases) needed to verify the system level requirements. Most of the detailed planning must still be performed. It may be difficult to complete the DVT Plan before the Critical Design Review (CDR) meeting. In addition, an estimate of the

time and resources needed to execute the DVT cannot be determined at this time. This has potential impacts to the expected time/resources needed to develop and perform the resultant test procedures; and, as a result, the delivery of R1C2 could be delayed.

- The DVT scenarios do not directly coincide with the FDsys Software Feature Specification (SFS). This could result in gaps between the expected operational performance defined by the SFS "Features" and the actual performance demonstrated by the DVT test results.

The IV&V recommendations related to this task were delivered to the GPO CIO in a report dated March 13, 2008. These recommendations are provided in section 7 of this report.

6. Perform Risk Analysis

Another IV&V task completed during this quarter was an analysis of the previously identified FDsys risks and the current state of the Harris risk management program. IV&V reviewed the available risk related information available from Harris and the Harris Risk Management Plan, dated December 6, 2006. The key IV&V findings with respect to the risk management program were as follows:

- An active risk management program existed for FDsys up until August 2007. Briefings were held, the risk database was regularly updated, risk remediation plans were created, and a Risk Assessment was performed.
- Since August 2007, risk management seems to have halted. The last available update to the risk database (actually an Excel spreadsheet) occurred on June 12, 2007. Although the Risk Management Plan calls for monthly meetings of the Risk Review Board, the most recent Risk Review Board meeting occurred in December 2006.
- Harris performed a Risk Assessment in early August 2007. A Risk Assessment Results Briefing PowerPoint presentation of August 9, 2007 states that 6 Program Interview Groups identified over 90 risks, which they grouped into 17 categorizes.
- IV&V has been providing risks to the PMO via quarterly risk reports, as well as, other IV&V reports and presentations. There is no evidence that these risks have been added to the FDsys risk database or are being actively managed by Harris.

IV&V also analyzed the available risk data and updated the status of existing risks based on the current state of FDsys. The IV&V risks and the conditions that caused these risks were updated to reflect the most current available information. IV&V mitigation recommendations for each risk were also provided. IV&V summarized the numerous Harris risk statements into high-level risks, with the accompanying detail-level risk statements from Harris.

A mitigation recommendation for each high-level risk was provided to the GPO CIO in an IV&V report dated January 22, 2008. In addition, the results of this task were presented to the GPO CIO in a briefing on January 24, 2008.

The IV&V recommendations related to this task are provided in section 7 of this report.

7. Recommendations

1) IV&V recommends that Harris examine the discrepancies identified by the requirements allocation and traceability evaluation task. If the identified requirements were either improperly traced or improperly allocated, they should be corrected during the preliminary design phase for R1C2. This will ensure that all requirements are properly allocated and traced prior to the start of the detailed design for FDsys R1C2.

Management's Response. Concur. Harris is examining the allocation of requirements based on the SDD's component model. This activity is ongoing. The complete text of management's response is in Appendix A.

Evaluation of Management's Response. Management's actions are responsive to the recommendation. The recommendation is resolved, but will remain undispositioned and open for reporting purposes until corrective actions are completed.

2) IV&V recommends that the GPO PMO and Harris review and adjudicate the comments to the R1C2 test documentation. The Harris design and development team, in cooperation with the GPO PMO, should determine the required updates to the MTP and DVT Plan needed to resolve the comments.

Management's Response. Concur. The PMO, Harris and the MITRE test lead will work together to develop a cohesive test strategy (see Appendix A).

Evaluation of Management's Response. Management's actions are responsive to the recommendation. The recommendation is resolved, but will remain undispositioned and open for reporting purposes until corrective actions are completed.

3) IV&V recommends an active risk management program be established as soon as possible. The re-establishment of a managed risk program would provide several benefits to the FDsys effort:
   - Open communication would be enhanced;
   - Trust and cooperation between the GPO and Harris would improve; and,
   - Problems could be addressed and possibly avoided at an earlier point in time, minimizing cost and schedule impacts.

Management's Response. Concur. The Risk Management process was restarted on March 24, 2008 (see Appendix A).

Evaluation of Management's Response. Management's actions are responsive to the recommendation. Based upon IV&V's follow-up activities, this recommendation is resolved and dispositioned, and considered closed for reporting purposes.

4) With each passing week, the lack of a plan for FDsys R1C2 magnifies the technical, schedule, and cost risks identified above. Therefore, as the initial (and most beneficial) step to mitigate these risks, IV&V strongly recommends that the PMO develop a detailed plan to move forward as soon as possible. Once it has been prepared, this plan should be evaluated with respect to completeness and feasibility by IV&V. The FDsys R1C2 plan should address the following:

   - At a high level, the plan should provide a clear definition of the Program's goals in terms of scope and schedule. That is, if the system will be operational in late 2008, identify the scope and functionality of the system. If all of the R1C2 requirements are not initially implemented, identify when all R1C2 functionality will be available to the stakeholders.

   - At a detailed level, the plan should contain the following information:
     - Program Management Information
       - Detailed Schedule and Work Breakdown Structure detailing when tasks will be completed and what work products will be developed
       - Effort estimation for each of the tasks and who will perform those tasks
       - How progress will be measured for each of the tasks
       - How project risk and quality assurance will be handled
       - What project reviews will be held
       - What approval process will be used for technical changes and documents
       - How the sub-contractors will be managed
     - Organizational Information
       - How the project will be organized
       - Who has what roles and responsibilities
     - Technical Information
       - Who is responsible for each technical discipline and how they intend to manage that discipline, e.g.,
         - Security
         - Configuration and Requirements Management
         - System Architecture
         - Software Management and Software Design
         - Interface Management and Integration
         - Hardware and Networking
         - Deployment

- Training
- Organizational Change Management
- Load, Performance, and Failure Modeling
- Data Architecture
- Test

➢ What methodology and or processes will be used to provide the work products for that discipline

Management's Response. Concur. An informal, high level program plan was developed in March. GPO has taken steps to bring in expert resources from MITRE Corporation to develop a formal program plan. In addition, the team is working to finalize the integrated master plan at a task level by the middle of July (see Appendix A).

Evaluation of Management's Response. Management's actions are responsive to the recommendation. The recommendation is resolved, but will remain undispositioned and open for reporting purposes until corrective actions are completed.

U.S. GOVERNMENT PRINTING OFFICE
KEEPING AMERICA INFORMED

DATE: July 24, 2008

REPLY TO ATTN OF: Chief Information Officer

SUBJECT: Report on FDsys – Third Quarter IV&V Risk Management, Issues and Traceability Report

TO: Assistant Inspector General for Audits and Inspections

Thank you for the opportunity to respond to the observations and recommendations of the IV&V contractor for FDsys. As you know from our previous conversation while I agree with many of the IV&V observations and recommendations I am very concerned about the continued gross lack of context associated with this report. Without proper context a reader, not familiar with the program history and failings on the part of the Master Integrator (Harris Corporation) could easily conclude that GPO is acting foolishly. The Program Office remains convinced that the program realignment changes are in the best interest of the Government.

This response addresses the issues raised by the report and also addresses the recommendations made at the end of the report. GPO's responses are also loosely categorized based on the report as: No Detailed Plan, Government Oversight, System Design Documentation, Schedule Risk, Cost Risk and Test Documentation.

Part 1 – Inaccuracies in the report and Government responses:

Inaccuracy #1: First Sentence, First Paragraph on Page 4 -It is misleading and inaccurate to state that GPO ***"believed that the Harris team was not adequately managing the program..."*** The facts are quite clear and convincing that the Harris team was not adequately managing the program from August, 2007 until the program realignment in February 2008. While we experienced some program management issues during the first ten (10) months of the program, the last six (6) months (August 2007 to February 2008) were characterized by inadequate program management. Examples include, but are not limited to: Standard Harris program management processes such as Risk Management and Change Management were ignored or abandoned; Harris' failure to honor the contractual Key Personnel clauses; loss of key resources from the Harris side due to internal Harris policy.

The fact is that during the eighteen (18) months that Harris was the Master

Integrator for FDsys, the program was over budget, Harris could not deliver a detailed program plan, Harris developers could not meet the agreed upon requirements, and ultimately Harris failed to deliver a working production system. The Harris re-plan proposal, delivered in January, 2008, that was rejected by GPO in February of 2008 promised a greatly de-scoped "pilot" system that had no hope of meeting GPO or stakeholder needs. This inadequate program management led to the following changes identified in the IV&V report.

No Detailed Plan

Issue #1: No Detailed Plan - GPO is working on the detailed program plan – including the overall integrated schedule. An informal, high level program plan was developed in March. GPO has taken steps to bring in expert resources from MITRE Corporation to develop a formal program plan and initial cuts at the detailed plan have been provided by MITRE in June. In addition the team is diligently working to finalize the integrated master plan at a task level by the middle of July.

Issue #2: Ad Hoc Approach - An informal, high level program plan was developed in March. GPO has taken steps to bring in expert resources from MITRE Corporation to develop a formal program plan. The acquisition, of course, took some time but the resource is now developing the detailed plan. In addition, the development schedule has been developed. Harris Corporation, while managing FDsys, failed to have a formal program plan from April of 2007 through January of 2008. This was one of the key reasons for GPO assuming program control.

Issue #3: No Formal Deliverables -Deliverables have been established in the new statement of work (SOW) concluded between Harris and GPO in late April. These deliverables include quality and productivity targets. In fact, Harris did not want concrete deliverables, or productivity/quality targets. Some of the delay in concluding on the SOW can be directly attributed to this lack of commitment from Harris.

Issue #4: Procurement and Installation of HW -An acquisition was conducted last year for Server and Storage Hardware. An order for the Test instance of FDsys has been placed and an IDIQ contract exists until August of this year for GPO to order the required HW for the Production instance (the Bill of Materials previously for the Production instance is in draft form). GPO anticipates a late July buy for the Production equipment with installation August. Harris Corporation, while managing FDsys, could not deliver a final Bill of Materials or development schedule for HW implementation. Several times "final" bills of material were provided to the Government only to later be deemed not "final" by Harris program staff.

Issue #5: Scope of R1C.2 and Requirements -Due to Harris' inability to deliver

and their reliance on custom code rather than integration of COTS, GPO has been forced to repeatedly reduce functionality of the first operational release (R1C.2). The remaining requirements represent the minimum functionality that would be accepted by stakeholders. GPO believes that by leveraging more expert resources and minimizing the amount of software customization, the desired end of the year launch is feasible.

Issue #6: Use of a Pilot -There is no pilot associated with R1C.2. Harris Corporation, in the February, 2008 re-plan proposal, suggested that we develop another pilot of FDsys for R1C.2. GPO deemed this unacceptable based on stakeholder feedback AND the fact that a pilot (R1B) had already been produced by Harris. The current plan for development is to stand up an early system prototype for the Documentum repository. GPO acknowledges that the term "Pilot" was used in a program review; however, significant voice over was added to the presentation and afterwards by the Director of Programs (Scott Stovall) that clarified that the term pilot was used vaguely and that we were, in fact, talking about a tool to aid design and development – such as the prototype now planned for R1C.2.

Government Oversight

Issue #7: GPO Experience - GPO has never designed, built, deployed or managed the software development of a system as large and complex as FDsys. Therefore, GPO has engaged experts from MITRE Corporation and has engaged a SETA contractor to augment the experiences the PMO has gained over the past eighteen (18) months with Harris Corporation including the stand up of the R1B prototype. Harris staff turnover resulted in significant gaps in program specific experience and, we feel, created a risk greater than the risk of lack of experience within GPO.

Issue #8: SETA Contractor - GPO has concluded on a contract with Flatirons Solutions for SETA support.

Issue #9: Oversight & Responsibilities - GPO disagrees with the assertion that this is unclear. The roles and responsibilities of each person or position in the program is known, documented and has been communicated.

Issue #10: Lack of a Complete and Detailed Design - GPO fully intends to create a detailed design document that clearly communicates how the development team is to build the system. Harris Developers are fully engaged in this process and as an augment; GPO has contracted with subject matter experts (SME's) to support key applications from FAST and Documentum. Significant progress has been made on the System Design Document (SDD) over the past few months and a draft is available for IVV review. Harris Corporation did not provide a detailed design document for R1B or for R1C.2 planning. At the time of program realignment there was no indication that Harris had taken appropriate steps to correct this issue. It was clear to GPO that Harris was not capable of providing a detailed design in a timely enough fashion to support R1C.2's desired end of 2008 launch.

System Design Document (SDD)

Issue #11: Time and Effort for Preliminary Design - GPO has been diligently working to move the SDD to a level of quality indicated in Harris Critical Design guidelines over the past few months. This will be complete at the Detailed Design Review. Portions of Harris' design that were of sufficient detail and quality have been incorporated in the SDD.

Issue #12: R1C2 Feature Mapping - Mapping to features, a process introduced in mid 2007 by Harris which was never fully fleshed out, has been abandoned. The system is now mapped to components which align much more appropriately to the original FDsys clusters and the working groups used throughout the program. The proposed design will encompass all the requirements for R1C.2. Harris could not justify the move to features or the processes involved to manage this process. In fact, Harris changed design methodology repeatedly throughout post R1B activities.

Issue #13: SDD and Other Documentation - GPO agrees that the SDD has impacted other documentation. Harris was tasked with updating the Hardware Design Document (HDD) immediately after the program realignment; however, they have failed to do so. The PMO is now taking the lead on this activity. Software Feature Specifications no longer exist as they were never fully described by Harris. Workflows and use cases have been updated to reflect the SDD. Other documentation is being updated.

Issue #14: Difficulty of Design - GPO agrees that there is a risk that subject matter experts (SME's) may take spin up time and that the design may take longer than expected. GPO has adopted an approach to bring in experts in the tool set which ensures that spin up time is minimized. To date this risk has not materialized as a problem. The Documentum SME's have been on board since January, and FAST SME support engaged in early April. The progress made by the SME's and Harris development staff augmented by the PMO on the emerging SDD has been good.

Issue #15: Design – COTS Dependency - GPO agrees that this is a risk and is working to ensure that the system remains flexible.

Schedule Risks

Issue #16: Detailed Plan – This issue has been covered previously.

Issue #17: Staffing and Hiring - All staffing gaps are currently covered. GPO believes that the current staff is appropriate for the point in the program and we believe that the quality of resources is now superior to the staff on the program at the time of the realignment.

Issue #18: Maturity of the SDD – The program office disagrees that the SDD is less mature than the Harris developed System Architecture and Design Document (SADD). In addition, issues pertaining to the SDD and delays have been covered previously in this memo.

Cost Risks

Issue #19: Schedule Risks Driving Cost Risks -GPO fully understands the costs associated with schedule delays. The approach to realign will likely yield a lower development cost due to the reduction in overhead associated with Harris program management. Harris could not commit to delivering a fully functioning system in 2008. Harris proposed a scaled back version of the system, in pilot form only – one that would not meet our requirements.

Issue #20: Program Reorganization - GPO disagrees that the reorganization delays the development schedule. Overall, the Harris developers had very little exposure to the SADD. In some cases it was a communication issue while in others it was due to the fact that staff turnover necessitated bringing in developers with no FDsys experience. GPO believes that the current SDD process has engaged the developers more in the design, and that they are more vested in the SDD than development staff ever was in the Harris SADD.

Test Documentation

Issue #21: Master Test Plan - GPO Agrees and is taking steps to ensure tasks are included in the MTP. Please note that a formal MTP was delivered by MITRE at the end of June, 2008.

Issue #22: Design Validation Approach - GPO has support engaged from MITRE and is working to create comprehensive test approaches for FDsys.

Issue #23: DVT Scenarios and SFS - This has been previously addressed. The concept of SFS was never fully fleshed out by Harris (See notes above) and is no longer relevant.

Risk Management

Issue #24: Active Risk Management -The FDsys Risk Management activity was restarted at the end of March 2008. Additional risks were identified and added to the updated risk database. Risks were reviewed, accepted or rejected by the RRB, and risk handling plans are in development. A revised Risk Management Plan reflecting GPO's program management role has been drafted and is pending IV&V review.

Issue #25: Halt of Risk Management - The Risk Review Board now meets biweekly, and is focused upon R1C2 risks and problems. Risk Management reports will be included in the monthly Program Reviews. RRB minutes are available to the entire team. During the final phase of Harris Corporation program management responsiblity, from August 2007 until February 2008, the risk management process was halted.

Issue #26: Risks Assessment - In March 2008 approximately 30 new program risks were identified and added to the risk data base. They were assessed by the RRB for probability, impact, and proximity. Two items were identified as problems and are being addressed. Risk handling plans, primarily mitigations, are being developed by risk owners based on proximity in time.

Issue #27: IV&V Risks not added to Risk Process -The IV&V Quick Look report on Risk Management dated April 4, 2008, identified numerous opportunities to strengthen this activity. These recommendations related to the Risk Management process and plan have been incorporated into the revitalized Risk Management activity.

Part 2 – Response to Recommendations:

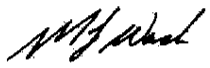
Recommendation #1: Requirements Allocation - This is activity is ongoing. Harris, at the direction of GPO, is examining the allocation of requirements based on the SDD's component model. This includes derived requirements.

Recommendation #2: Comments on R1C.2 Test Documentation - The PMO, Harris and the MITRE test lead will work together to develop a cohesive test strategy. This will include updating all test plans and resolution of comments.

Recommendation #3: Reestablish Risk Management - GPO agrees and the Risk Management process was restarted on March 24, 2008.

Recommendation #4: Lack of a plan - An informal, high level program plan was developed in March. GPO has taken steps to bring in expert resources from MITRE Corporation to develop a formal program plan and initial cuts at the detailed plan have been provided by MITRE. In addition the team is diligently working to finalize the integrated master plan at a task level by the middle of July.

Thank you again for the opportunity to respond to this report. We look forward to working with you on this project.



MICHAEL L. WASH

Appendix B. Status of Recommendations

Recommendation No.	Resolved	Unresolved	Open/ECD*	Closed
1	X		9/30/08	
2	X		9/30/08	
3	X			8/08/08
4	X		9/30/08	

*Estimated Completion Date.

Appendix C. Report Distribution

Public Printer
Chief of Staff
General Counsel
Chief Management Officer
Chief Technology Officer
Chief Acquisition Officer